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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/706,541	11/12/2003	Gerolf Richter	054821-0875	6887

26371 7590 11/20/2006		EXAMINER
FOLEY & LARDNER LLP		BERHANU, SAMUEL
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ART UNIT	PAPER NUMBER
2838	

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Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

	Application No.	Applicant(s)
Office Action Summary	10/706,541	RICHTER ET AL.
	Examiner	Art Unit	
	Samuel Berhanu	2838	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on <u>08/25/2006</u>.

2a) ☐ This action is **FINAL.**   2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) <u>9 and 11-20</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) <u>9,11-15,19 and 20</u> is/are rejected.

7) ☒ Claim(s) <u>16-18</u> is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☒ The drawing(s) filed on <u>12 November 2003</u> is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) ☒ All   b) ☐ Some * c) ☐ None of:

        1. ☐ Certified copies of the priority documents have been received.

        2. ☐ Certified copies of the priority documents have been received in Application No. _____.

        3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

1.   Claims 17 and 20 are objected to because of the following informalities:

Claim17 recites the limitation "constant a " in line 1, and "constant b" in line 2.

There is insufficient antecedent basis for this limitation in the claim.

For examination purpose examiner assumed that Claim 17 is dependent upon

Claim 16.

Claim 20, recites the limitation "the computer program" in line 1. There is

insufficient antecedent basis for this limitation in the claim For examination

purpose examiner assumed that Claim 20 is dependent upon Claim 19.

Claim Rejections - 35 USC § 103

2.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for

all obviousness rejections set forth in this Office action: .

> (a) A patent may not be obtained though the invention is not identically disclosed or described
> as set forth in section 102 of this title, if the differences between the subject matter sought to
> be patented and the prior art are such that the subject matter as a whole would have been
> obvious at the time the invention was made to a person having ordinary skill in the art to which
> said subject matter pertains. Patentability shall not be negatived by the manner in which the
> invention was made.

3.   Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over

Mentgen et al. (US 2002/0101243) in view of Okda et al. (US 5,949,217), and in

view of Ng et. al. (US 2005/0089750).

Regarding Claim 9, Mentgen et al. disclose in Figures 1 and 2, a monitoring

device for energy storage batteries comprising: a computation device (22) for

determining the charge drawn by an energy storage battery starting from an

initial state of charge at the start of the drawing of the charge (Page 2, Paragraph

0022); wherein the computation device is desired to carry out a method

comprising: a method comprising determining the charge drawn by an energy

storage battery starting from an initial state of charge at the start of the drawing

of the charge (Paragraph 9, charging or discharging), the method comprising:

determining the charge drawn as a function of an exponential function (Page 1,

lines 1-25) with a time constant, wherein the time constant is defined at least as a

function of the energy storage battery type and of the temperature of the

electrolyte temperature (Paragraph 18, it is inherent that the measuring the

battery temperature incorporates the battery electrolyte, when the battery is hot

so as the electrolytes, the battery is made of these electrolytes and its

temperature is correlated with its electrolyte). However, Mentgen et al. do not

disclose a device for measuring battery temperature.

Okda et al. disclose in Figure 1, a device for measuring battery temperature

(Column 3, lines 5-9). It would have been obvious at the time of the invention to a

person having ordinary skill in the art to add a temperature measuring means in

Mentgen et al. device in order to avoid battery overheating.

Ng et. al. disclose paragraph 102 that the time constant is depend upon battery

type. It would have been obvious to a person having ordinary skill in the art at the

time of the invention to relate a time constant with battery type as taught by Ng

et. al. in Mentgen et. al. device in order to obtain a time constant as low as

possible in order to bring the battery at a specified operating rate with in a short

period of time.

4.   Claims 11-15 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Mentgen et al. (US 2002/0101243) in view of Hazel (5,381,096), and in view

of Ng et. al. (US 2005/0089750)

   Regarding Claim 11, Mentgen et al. disclose in Figure 1, determining the

charge drawn as a function of an exponential function (Noted that soc is a

charging result and one of the weight function is expresses in exponential form,

please see formula 1 and 2) with a time constant, wherein the time constant is

defined at least as a function of the energy storage battery type and of the

temperature of the electrolyte (Page 2, Paragraph 18). However, Mentgen et al.

do not disclose a computer program code designed to carry out a method when

the computer program is run using a processor device, wherein the computer

program is a program file stored on a data storage medium (74) (Column 10,

lines 31-41). Hirzel discloses in Figure 8, a computer program code designed to

carry out a method when the computer program is run using a processor device,

where in the computer program is a program file stored on a data storage

medium (74) (Column 3, lines 46-49, Column 10, lines 31- 41). It would have

been obvious at the time of the invention to a person having ordinary skill in the

art to modify Mentgen et al. device and use a computer program as taught by

Hirzel in order to accurately calculates the state of charge of the battery.

Ng et. al. disclose   paragraph 102 that the time constant is depend upon battery

type. It would have been obvious to a person having ordinary skill in the art at the

time of the invention to relate a time constant with battery type as taught by Ng

et. al. in Mentgen et. al. device in order to obtain a time constant as low as

possible in order to bring the battery at a specified operating rate with in a short period of time.

Regarding Claim 12, Mentgen et al. disclose the time constant is also defined as a function of the state of charge at the start of the drawing of the charge (Paragraph 18).

Regarding Claim 13, Mentgen et al. disclose the time constant is also defined as a function of at least one of a charging voltage, a mean charging voltage and a rated charging voltage (Page 1, Paragraph 9)

Regarding Claim 14, Mentgen et al. disclose in Equation 1 and 2 in page 1 paragraphs 6-9, the absolute amount of charge drawn according to the function

$$\Delta Q \approx (1 - e^{-t/\tau}) (Q_o - Q_s),$$

where ΔQ is the absolute amount of charge drawn, Q_o is the defined rated capacity of the energy storage battery, and Q_s is the initial charge of the energy storage battery at the start of the drawing of the charge. (Page 1, paragraph 6-7)

Regarding Claim 15, Mentgen et al. disclose in Equation 1 and 2 in page 1 determining the relative state of charge of the energy storage battery with respect to the rated capacity of the energy storage battery according to the function:

$$Q_t (t)/Qo \approx 1 - (1 - Qs/Qo)^{-t/\tau}$$

where $Q (t)/Qo$ is the relative state of charge of the energy storage battery, Qo is the rated capacity of the energy storage battery, and Qs is the initial charge of the energy storage battery at the start of the drawing of the charge (Page 1, paragraph 6-7).

5.   Claims 19-20 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Mentgen et al. (US 2002/0101243) in view of Okda et al. (US 5,949,217),

and in view of Ng et. al. (US 2005/0089750), further in view of Hirzel (5,381,096).

Regarding Claim 19, neither Mentgen et al. nor Okada et. al. disclose explicitly,

a computer program comprising computer program code designed to carry out

the method when the computer program is run using a processor device.

However, Hirzel discloses in Figure 8, a computer program code designed to

carry out a method when the computer program is run using a processor device.

It would have been obvious at the time of the invention to a person having

ordinary skill in the art to modify Mentgen et al. device and use a computer

program as taught by Hirzel in order to accurately calculates the state of charge

of the battery.

Regarding Claim 20, Hirzel discloses where in the computer program is a

program file stored on a data storage medium (74) (Column 3, lines 46-49,

Column 10, lines 31- 41).

Allowable Subject Matter

6.   Claim 16 and 18 are objected to as being dependent upon a rejected base

claim, but would be allowable if rewritten in independent form including all of the

limitations of the base claim and any intervening claims.

Regarding Claim 16: primarily, the prior art of record does not disclose or

suggest in the claimed combination: a first correction factor for the time constant,

the first correction factor being determined using the formula:

$$\tau_T = a^{-(T_e - Te,0)/b}$$

where τ_T is the first correction factor, Te is the electrolyte

temperature of the energy storage battery, $T_{e,0}$ is a defined electrolyte nominal

temperature, and a and b are constants.

Regarding Claim 18: primarily, the prior art of record does not disclose or

suggest in the claimed combination: a second correction factor for the time

constant, the second correction factor having a value between 1 and 1 - Qs/Q_0.

7.   Claim 17 would be allowable if rewritten to overcome the objection(s) set

forth in this Office action and to include all of the limitations of the base claim and

any intervening claims.

Claim 17 is considered by the examiner as being dependent upon Claim

16 rather than Claim 15, since what is in these claims are to be found in claim 16

not in Claim 15.

Response to Arguments

8.   Applicant's arguments filed 01/06/06 have been fully considered but they

are not persuasive, or moot in view of new ground(s) of rejection.

9.   In response to applicant's arguments, the recitation "monitoring device"

has not been given patentable weight because the recitation occurs in the

preamble. A preamble is generally not accorded any patentable weight where it

merely recites the purpose of a process or the intended use of a structure, and

where the body of the claim does not depend on the preamble for completeness

but, instead, the process steps or structural limitations are able to stand alone.

See *In re Hirao*, 535 F.2d 67, 190 USPQ 15 (CCPA 1976) and *Kropa v. Robie*,

187 F.2d 150, 152, 88 USPQ 478, 481 (CCPA 1951). Noted also that the

temperature measuring means disclosed by Okda et. al can be considered as a

monitoring means.

Applicant argues that there is no teaching or suggestion in Mentgen et al."

wherein the time constant is defined at least as a function of the electrolyte

temperature " This is incorrect.

Mentgen et al. disclose in Figure 1, a time constant, defined as a function of

battery temperature (see paragraph 018). A battery consists of electrolytes, so

the battery temperature is the temperature of the electrolytes.

10.   In response to applicant's argument that there is no suggestion to combine

the references, the examiner recognizes that obviousness can only be

established by combining or modifying the teachings of the prior art to produce

the claimed invention where there is some teaching, suggestion, or motivation to

do so found either in the references themselves or in the knowledge generally

available to one of ordinary skill in the art. See *In re Fine,* 837 F.2d 1071, 5

USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones,* 958 F.2d 347, 21 USPQ2d 1941

(Fed. Cir. 1992). In this case, Hrizel discloses and taught in Col.11, lines 8-15,

that the computer system or the digital system is providing accurate charge

calculation method.

Conclusion

If attempts to reach the examiner by telephone are unsuccessful, the

examiner's supervisor, Karl Easthom can be reached on 571-272-1989. The fax

phone number for the organization where this application or proceeding is

assigned is 571-273-8300.

Information regarding the status of an application may be obtained from

the Patent Application Information Retrieval (PAIR) system. Status information

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direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-

free).

SB

KARL EASTHOM
SUPERVISORY PATENT EXAMINER